

## CLAIMS

1. An engine lag down control system for construction machinery provided with an engine, a main pump driven by said engine, a torque regulating means for regulating a maximum pump torque of said main pump, a hydraulic actuator driven by pressure fluid delivered from said main pump, and a control device of controlling said hydraulic actuator,

said engine lag down control system including:

10 a first torque control means for controlling said torque regulating means to a predetermined low pump torque lower than the maximum pump torque when a non-operated state of said control device has continued beyond a predetermined monitoring time, and

15 a second torque control means for controlling said torque regulating means to the predetermined low pump torque or to a pump torque around the predetermined low pump torque for a predetermined holding time subsequent to an operation of said control device from the non-operated state while said torque regulating means is being controlled by said first torque control means,

to control small a temporary reduction in engine revolutions that occurs upon operation of said control device from the non-operated state, characterized in that:

25 said engine lag down control system is provided with a third torque control means for controlling said torque regulating

means such that from a time point of a lapse of the predetermined holding time, the pump torque of said main pump gradually increases at a predetermined torque increment rate as time goes on.

5        2. The invention as described in claim 1, wherein said third torque control means comprises a means for controlling the torque increment rate to be held constant during a change from the predetermined low pump torque to a maximum pump torque corresponding to a target number of revolutions of said engine.

10        3. The invention as described in claim 1, wherein said third torque control means comprises a means for variably controlling the torque increment torque during a change from the predetermined low pump torque to a maximum pump torque corresponding to a target number of revolutions of said engine.

15        4. The invention as described in claim 3, wherein said means for variably controlling the torque increment rate comprises a means for sequentially computing the torque increment rate for every unit time.

20        5. The invention as described in claim 1, wherein:  
said engine lag down control system is provided with a speed sensing control means having a corrected torque computing unit, which determines a torque correction value corresponding to a revolution deviation of an actual number of revolutions of said engine from a target number of revolutions of said engine,  
25        for determining a target value for the maximum pump torque, which

is controlled by said first torque control means, on a basis of the torque correction value determined by said corrected torque computing unit, and

5       said third torque control means comprises a function setting unit for setting beforehand a functional relation between torque correction values and torque increment rates, and a means for computing a torque increment rate from the torque correction value determined by said corrected torque computing unit of said speed sensing control means and the functional relation set by  
10      said function setting unit.

6. The invention as described in claim 5, wherein:

      said engine lag down control system is provided with a boost pressure sensor for detecting a boost pressure, and

      said third torque control means comprises a torque increment rate correction means for correcting the torque increment rate in accordance with the boost pressure detected  
15      by said boost pressure sensor.